

A Careful Study on  
*Roofs and Fires*



*"Every three minutes  
a house catches fire."*

**How** to avoid  
to face **Fire**



In one year 165,000 houses catch fire!  
Can you realize what it means?  
It means every house in a city the size of

St. Louis (Mo.). It represents a line of burning houses from the Canadian border to the Gulf of Mexico. (Not Rhetoric, but sad facts).

## Fire Damage and Danger

Why let your house catch fire? Sounds brutal, but you will thank us for asking. The fire protection of your home is well worth thinking over; for *every three minutes a house catches fire* in this country—165,000 of them in 1907, almost as many houses as were built in that year.

Our fire epidemic is increasing every year. In 1908 it amounted to \$237,000,000, according to the Fire Underwriters. This is property actually gone up in smoke.

In addition, we paid about \$342,000,000 for insurance premiums\*—making a total fire burden of \$579,000,000.

The Insurance Companies paid back for fire indemnities some \$135,000,000. But this is more than offset by the incalculable death loss through fire, the cost of fire departments or other fire protection, and the tremendous loss through interrupted plans and business.

"\$579,000,000 fire burden! Incredible!" you say; "there are not many fires in our town during the year. I don't see many. I don't read of many."

This attitude is natural. But remember—

You are not apt to hear of any but big fires elsewhere. It takes only a few seconds to snuff

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\*Do not blame the Insurance Companies for that. They are business institutions entitled to a reasonable profit. And their's is mighty small, considering that conflagrations like the Baltimore and San Francisco fires wipe out the earnings and surplus gathered for a generation. The blame rests entirely with the builders for using combustible material.

out human lives; only a few minutes to destroy the savings of a life-time; only a few hours to burn up property worth millions of dollars.

Our annual fire burden is so enormous that we can grasp its very immensity only by comparison.

It exceeded in 1908—

The running expenses of the Federal Government for the same year (\$555,000,000.)

The combined assessed property valuation of Arkansas, Alabama, Nevada, New Mexico and Oklahoma.

The production of gold in the last 8 years,—about \$500,000,000.

The value of new buildings during the year was about \$1,000,000,000. We paid about one-half of that for fire burden.

Nor do we learn by experience. The number and value of our buildings increase with the years. So does the fire loss, as shown by the following table of

#### **Fire Losses in the United States in the Past 28 Years.**

Year	Fire Loss	Population
1880	\$94,000,000.00	50,000,000
1890	101,000,000.00	63,000,000
1900	137,000,000.00	76,000,000
1908	237,000,000.00	87,000,000

*Increase in population since 1880. 73%  
Increase in fire loss since 1880....134%  
Almost double the increase in population.*

Of course, the figures are only a partial indication of fire damage. Mere dollars and cents can give no idea of the thousands of cases of heart-rending anguish and suffering caused every year by death or injury through fire.

The United States Geological Survey reports from this cause in 1908, 1449 deaths and 5654 people injured. This is only a partial list; for the report says:



"These figures are incomplete and do not represent more than one-half the persons who were victims of the fires. Many fire chiefs of large cities fail to report any deaths because they could not be properly included in their annual reports. The number of persons killed and injured here is from five to seven times greater than in Europe. The cause of this gain is faulty construction of buildings in many instances."

*What makes this danger all the more terrible is its suddenness. No one can tell when and where it is going to strike next. Even the dreadful Black Hand gives warning. Fire does not.*

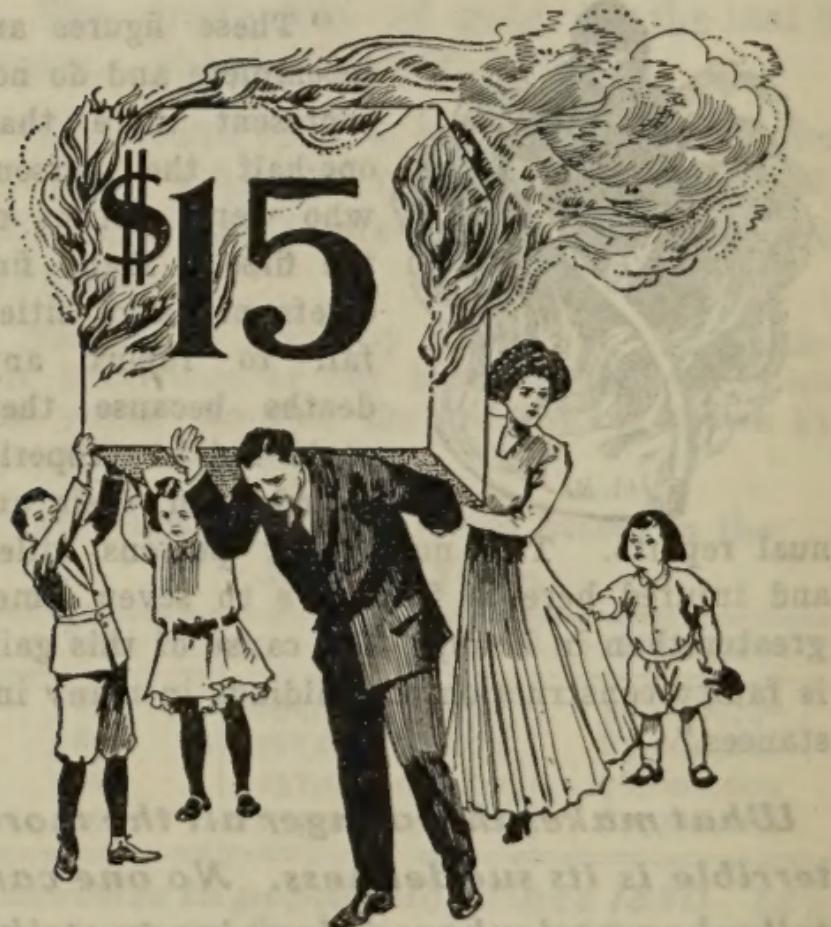
# What the Fire Loss Really Means to Your Pocketbook

Who has to pay this \$500,000,000 fire burden every year? The public at large which means you and me.

It is not only the insurance policies you pay. ***On every article you buy, you pay three insurance premiums.***

The manufacturer must include the cost of his fire insurance in the cost of his goods. So does the jobber when they reach him. So does the retailer.

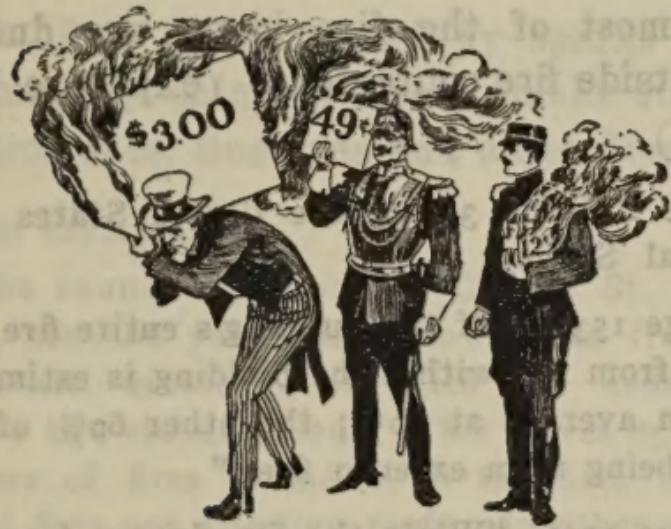
If you pay rent, the latter is high enough to reimburse the owner for the insurance.



***According to insurance statistics, the fire burden in this country averages \$3 per head. That means that the father of a family of five is taxed \$15 per year.***

## The Remedy

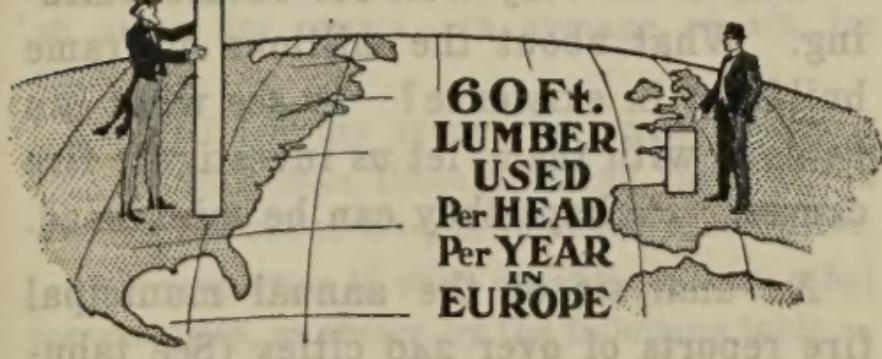
The yearly per capita loss by fire averages



12c. in Italy, 49c. in Germany. Here it is \$3.

**500 Ft.  
LUMBER  
USED  
Per HEAD  
Per YEAR  
in U.S.**

The reason for this difference is flimsy, combustible construction. The lumber habit is so prevalent here that—even with the cost of wood doubled in the past ten years—61% of all new buildings in 1907 were frame.



In Europe, combustible walls and roofs are not permitted,—even in small communities. Why not also here? This would considerably relieve the situation; for most of the fire losses are due to “outside fire contagion” (exposure hazard).

See Bulletin 324 of the United States Geological Survey:

Page 153: “Of the building’s entire fire risk that from fire within the building is estimated on an average at 40%; the other 60% of the risk being from exterior fires.”

Page 154: “While the fire danger from exterior fires to buildings is originally estimated at 60%, the risk practically becomes 100% in the course of a great conflagration.”

Page 157: “Roofs, roof appurtenances, and skylights should be given ample protection from fire without.”

## What about buildings in existence?

This is all very well for future building. What about the millions of frame buildings in existence? To see what can be done with them, let us investigate fire causes. Perhaps they can be minimized.

An analysis of the annual municipal fire reports of over 240 cities (See tabu-

lation on pages 17 to 22) proves that by far the largest percentage of fires are:

A—Chimney or flue fires, threatening roofs.

B—Roof fires caused by sparks from chimneys, chimney fires, smoke stacks, locomotives, flue fires and other fires.

For example:

The annual report of the City of St. Louis, Mo., for the year 1905, shows fires from 89 different causes, 4 of which are under the above two classifications. This leaves 85 other causes of fires to make up the 82% of the total fires not affecting roofs. In other words, the other fire causes average about 1% of the total number of fires; as against 18% of fires originating in, or directly affecting, roofs.

The Philadelphia fire report for 1906 shows 45 causes, of which 41 did not affect roofs. The roof and chimney fires claim 18% of the total; so that the remaining 82% average 2% for each of the 41 other causes.

The New York fire report for 1906, shows 42 different causes of fires. Of these, 4 are included in the above "roof percentage," leaving 38 other fire causes,—an average of 2% for each.

The Chicago fire report for 1906, shows 62 causes other than those affecting the roof, an average of about 11-3% for each other cause.

This proportion is even greater in most other communities, as shown by the following table.

**Percentage of chimney, flue and roof fires  
to the total fires in one year.<sup>1</sup>**

New York, N. Y.	10%	Eau Claire, Wis.	39%
Chicago, Ill.	15%	LaCrosse, Wis.	39%
Philadelphia, Pa.	18%	Louisville, Ky.	39%
St. Louis, Mo.	18%	Shreveport, La.	40%
Minneapolis, Minn.	18%	Vancouver, B. C.	42%
Salt Lake City, Utah	20%	Norwich, Conn.	45%
Racine, Wis.	24%	Tacoma, Wash.	50%
Plainfield, N. J.	28%	Wilmington, N. C.	55%
Savannah, Ga.	31%	Stillwater, Minn.	60%
Topeka, Kans.	32%	Concord, N. H.	62%
San Francisco, Cal.	36%	Paterson, N. J.	63%
Elizabeth, N. J.	38%	Chattanooga, Tenn.	68%
		South Bend, Ind.	75%

It is very significant that these percentages of roof or roof-threatening fires are highest in cities where shingles or other inflammable roofings are known to predominate.

<sup>1</sup> As the various fiscal years covered by the municipal reports are not confined between uniform calendar months (some start with January, others with April, others with November, etc.) it was impossible to compile these statistics for one calendar year. But in each case the figures cover a period of twelve successive months.

## Cities where Inflammable Roofs are known to Predominate.

Roof fires exceeding chimney fires	Total Fires.	Total Chimney Fires.	Chimney Fires per Cent.	Root Fires from Chimney	Root Fires per Cent.	Total Root Chimney Fires per Cent.	Root Parks from Chimney	Root Parks per Cent.	From Other Parks	From Other Parks per Cent.	Per Cent. of Roof Fires	Per Cent. of Roots	Per Cent. of Roots from Chimney	Per Cent. of Roots from Chimney	Per Cent. of Roots from Parks	Per Cent. of Roots from Parks	Per Cent. of Roots from Other Parks	Per Cent. of Roots from Other Parks	
	579	238	41	72	12 1/2	153	26.4	13	2.2	8	3.6	8	3.6	7	2.4	0	0	0	2
Atlanta, Ga. ....	579	238	41	72	12 1/2	153	26.4	13	2.2	8	3.6	8	3.6	7	2.4	0	0	0	2
Chattanooga, Tenn. ....	221	150	68	52	24	90	40.7	8	3.6	8	3.6	8	3.6	7	2.4	0	0	0	2
Jacksonville, Fla. ....	283	126	44 1/2	24	8	95	33.5	7	2.4	7	2.4	7	2.4	6	2.1	0	0	0	2
Knoxville, Tenn. ....	195	56	29	14	7 1/2	42	21.5	0	0	0	0	0	0	0	0	0	0	0	2
Wilmington, N. C. ....	151	84	56	38	25	43	28.5	3	2	2	1.6	0	0	0	0	0	0	0	2

## Cities where Slate Roofs are known to Predominate.

Allentown, Pa. ....	71	11	15	9	12 1/2	0	0	0	2	2.8									
Akron, Ohio. ....	174	33	19	15	8 1/2	15	8.5	3	1.7										
South Bend, Ind. ....	72	54	75	40	55	7	10	7	10										
Easton, Pa. ....	68	5	7	5	7.3	0	0	0	0										
Lima, Ohio. ....	119	37	31	35	29.4	0	0	0	0										

This record of fire protection by slate roofs agrees well with authorities like the following:

"American Dictionary of Architecture," Vol. 3, Page 263:

"In a few cases of absolute incombustible construction, the slate or tiles are tied by lead wire to iron lath . . . or in flat roofs, large slabs of slate or stone are bedded in cement."

The "American Contractor," issue of June 1st, 1907, in speaking about the conflagration following the earthquake in San Francisco, says:

"One of the lessons of the recent fire is, that if the buildings are to be made fireproof, they must have slate roofs. Comparatively few slate roofs have been placed on San Francisco buildings; but those which have them demonstrated their unquestionable superiority over all others."

Says "The Country House, a practical manual for the planning and construction of the American Country Home and its surroundings":

"In a locality where considerable wood abounds or where the nearness to other structures makes the flying sparks a menace, the question of slate roofs is not to be considered lightly. Under such circumstances, it is unequaled by any other material."

Says the roofing volume of "Illustrated Carpenter and Builder Series of Technical Manuals:"

"The value of roofing material is determined by a variety of causes, among which the most important are: first-cost, durability, appearance, resistance to fire, and consequent influence on the cost of insurance, and the expense of maintenance and repairs. We think it safe to say that nothing beats slate."

When you consider that the majority of "contagious" or exposure fires are caused by sparks descending from above, you will readily see that even in a frame house, the fire danger may be minimized by a slate roof.

Fortunately a roof of Genuine Bangor Slate Co.'s slate, is desirable not only for its fire protection, but also for its other virtues.

This is indirectly admitted by the makers of other roofings when their claims are compared under the searchlight of logic.

Tin or other metal roofs must be protected by "mineral" paint.

It is argued for composition, and patent or ready roofings, that their top or protective layer is "mineral" (gravel, slag, flint, quartz, etc.)

How much better then, must be a "mineral-throughout" roofing, such as Genuine Bangor Slate Co.'s slate. Being

non-porous, hence non-absorbent, it requires no paint to prevent rust or decay. Nor does its beautiful blue-black, silky lustre require any paint for appearance.

Every piece of slate is a separate unit, without grooves, locks or seams; thus furnishing a roof of unequalled elasticity, and unaffected by contraction or expansion from heat, cold, vibrations, etc.

### Fire Protection for those about to build

Your architect would much rather design for you a fireproof or fire-resisting building than a fire-feeding one. The difference in first cost seldom exceeds 20% for the former, and is more than made up by the lower insurance rates, freedom from repairs, better rent, etc.

Fire-fighting buildings are built of incombustible material, and as far as possible designed so as to afford only the minimum of draft for fire. Your architect will be able to guide you in this matter.

Suffice it to say that no matter how small your means, at least the walls and roof should be incombustible.

Hollow spaces in partitions and under floors should be avoided, or counteracted with "fire stops" that shut off the draft.

The chimney should be used for chimney purposes only, and not as a column to support beams or any other load.

Wherever possible stairways should be broken at each floor; that is, they should not form a fire-inviting flue from the ground to the top floor.

## Every-day Fire Precautions

(You will find it worth while to keep this handy for frequent reference by the occupants of your buildings).

Avoid ashes in wooden boxes, bins or on wooden floors; matches near stoves, ranges, gas jets, etc. Preferably use safety matches. Have metal or non-combustible receptacles for placing burnt matches. Keep matches so that mice, rats and children cannot get at them. Do not keep matches in the attic.

Avoid open lights. Even candles should be enclosed in a glass chimney or lantern.

Do not carry lamps unnecessarily from one room to another; lanterns are safer for such purposes. Fill, trim and clean lamps by daylight, or else by electric light. Keep lamps away from stoves, ranges or furnaces.

See that curtains or draperies cannot be blown against the lamp, candle or gas jet.

In case of gas jets, see that side brackets are not too close to wall nor chandelier burners too close to ceiling. If the walls or ceilings are thus blackened it is a danger sign.

Avoid kerosene, gasoline, etc., in the house as far as possible.

Don't use kerosene to help start the fire in the range or stove.

Don't use benzine with artificial light, except with electric light, nor in a room where there is a stove or range-fire.

**Do not illuminate Christmas trees with anything but small electric lights.**

**Wires for electric lights should be carefully inspected by experts from time to time.**

**When you smell the gas leaking (unless it be very minor), do not strike a match until the room has been thoroughly aired, letting out the liberated gas. Shut off the gas immediately at the meter and send for the plumber or the Gas Company. Leaks in gas pipes can be temporarily stopped with soft soap.**

**Do not place lamps or candles near the edge of tables or stands, and see that they will be out of the reach of children.**

**Do not leave children alone in the house with fire in stove or any artificial light,—except electric light.**

**Range:** The range shouldn't sit against any woodwork, and (unless the sides are exposed) should be backed and sided by brick or tile. Metal covered woodwork is not sufficient protection, as the heat conducted by the metal might char the woodwork and set it on fire.

**The range should be set on metal or stone base, and preferably be equipped with a flue to take care of the heated air.**

**Avoid using stove polishes containing benzine or oil.**

**When wearing garments with loose sleeves, keep away from open lights or fires.**

**Do not keep clothing or wash near the fire over night.**

**The furnace in the cellar should be sufficiently clear of the woodwork so that the latter will not char. It should stand on the ground or on a metal, stone or cement base.**

**A wooden cellar floor should not come within five feet of the furnace.**

**Do not overheat furnace, range or stove.**

Where flues enter the walls, see that the pipes fit tightly, and are provided with non-combustible collars.

Holes in the walls, partitions or chimneys should be promptly closed up.

On every floor should be one or more fire buckets filled with water. Any ordinary bucket will answer. But it is important to always have it filled and in the same place, so it can be found readily. The biggest blaze could have been put out with one bucket of water at the right time. If these buckets stand convenient to the stairways, they are easily available on any floor.

To make them more sightly they may be painted or covered to harmonize with the general color scheme of furnishing.

A rope with a suitable hook that readily fastens on the window sill should be in every room above the ground floor.

If you have a telephone in the house, see that every member of the family is familiar with the call number of the Fire Department. Also see that every one is familiar with the nearest fire call box.

Fire Drills in schools, public institutions, on board ship, etc., are recommended as a necessity. Why not also in private residences and factories?

***Even the smallest families will benefit from fire drills by giving the members cooler heads in time of emergency. Disasters are generally the result of minds confused by danger.***

## What to do when facing fire

In case of fire, shut doors and windows, to avoid drafts.

When using fire extinguishers or fire buckets, pour the water at the highest point of the fire and work downwards; which will also be the natural course of the water.

When curtains or draperies catch fire, pull them down quickly and smother the flames with woolen rugs or blankets.

When your clothes catch fire, do not run, as the draft thus created will only feed the flames. Wrap yourself or have somebody wrap you in woolen blankets, carpets, etc. Flimsy cotton material is unsuitable, as it quickly blazes up.

Oil fires cannot be quenched with water, but should be smothered with sand (from a handy flower pot), rugs, carpets, etc.

In a smoke-filled room the air is clearest near the floor. In many cases crawling will enable you to live through it.

# Percentage of Fires Affecting Roofs (From Municipal Annual Fire Reports<sup>†</sup>)

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
Allentown, Pa.	71	11	15.5	9	2	.	.
Akron, O.	174	33	19.0	15	15	.	3
*Albany, N. Y.	824	76	9.2	57	2	11	6
*Atlanta, Ga.	579	238	41.0	72	153	13	.
*Aurora, Ill.	99	28	28.2	8	10	9	1
†§Augusta, Ga.	287	166	57.8	24	136	3	3
†Altoona, Pa.	387	263	68.0	239	8	13	3
†Attleboro, Mass.	116	19	16.3	15	1	1	2
†Auburn, N. Y.	112	31	27.4	17	2	8	4
†Amsterdam, N. Y.	91	9	9.8	7	.	1	1
†Appleton, Wis.	98	27	27.5	22	.	5	.
†Anderson, Ind.	119	49	41.0	35	14	.	.
*Birm'gham, Ala.	529	180	34.0	44	.	.	136**
Bay City, Mich.	292	117	40.0	46	37	25	9
Bloomington, Ill.	137	63	45.9	43	4	16	.
Boston, Mass.	2404	349	14.5	245	21	72	11
Buffalo, N. Y.	1345	277	20.5	72	72	60	73
*Baltimore, Md.	1470	155	10.5	110	39	.	6
Brockton, Mass.	379	39	10.2	18	6	15	.
*Brookline, Mass.	232	103	44.4	32	6	64	1
Burlington, Ia.	129	10	7.7	10	.	.	.
†Battle Cr'k, Mich.	130	33	25.4	20	6	3	4
†Baton Rouge, La.	64	16	25.0	15	.	1	.
†Bingh'mt'n, N. Y.	113	18	15.9	4	.	4	10
†Burlington, Vt.	99	20	20.2	13	7	.	.
*Camden, N. J.	185	18	9.7	15	2	1	.
*Cedar Rapids, Ia.	206	99	48.0	73	15	7	4
*Charlest'n, W. Va.	127	33	25.6	19	14	.	.
Charleston, S.C.	183	55	30.0	24	29	1	1
*Charlotte, N. C.	134	60	44.0	50	.	5	5
Ch'tt'n'ga, Tenn.	221	150	67.9	52	90	4	4
Chicago, Ill.	6387	1004	15.7	484	313	129	78
*Clinton, Mass.	111	31	27.0	30	1	.	.
*Cohoes, N. Y.	102	14	13.7	9	.	5	.

||1906. \*1907. †1908. †See foot note on page 10. §Ordinance prohibiting shingle roofs went into effect 1/1/09.

\*Municipal year not coextensive with calendar year; major portion of report covers 1906, 1907 or 1908, according to mark. \*\*Shingle roofs. <sup>2</sup>Eleven months only.

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
*Cincinnati, O.	1194	248	20.7	164	57	24	3
Concord, N. H.	203	126	62.06	122	.	4	.
*Columbia, S. C.	82	21	25.6	15	4	1	1
†Carbondale, Pa.	31	10	32.2	6	.	3	11
†Carnegie, Pa.	17	4	23.3	1	2	1	.
†Col. Springs, Col.	242	46	19.0	19	5	22	.
†Chicopee, Mass.	125	17	13.6	11	3	1	2
†Cleveland, O.	2234	433	19.4	56	377**	.	.
†Columbus, O.	636	93	14.4	47	30	6	10
†Columbus, Ga.	143	76	53.1	12	62	2	.
†Corning, N. Y.	112	37	33.3	15	7	10	5
†Council Bluffs, Ia.	163	15	9.2	15	.	.	4
†Cumberland, Md.	52	20	38.4	18	1	1	.
*Dallas, Tex.	428	88	20.5	79	9	.	.
*Danbury, Conn.	112	22	19.6	19	.	3	.
*Dayton, O.	426	102	23.9	55	34	11	2
*Des Moines, Ia.	546	123	22.5	80	38	.	5
*Detroit, Mich.	1604	307	19.1	101	55	42	109
Duluth, Minn.	237	61	25.7	35	17	9	.
*Decatur, Ill.	142	18	12.6	16	.	2	.
Easton, Pa.	68	5	7.35	5	.	.	.
*Eau Claire, Wis.	138	54	39.1	37	13	.	4
*Elgin, Ill.	94	12	12.7	7	3	2	.
Elizabeth, N. J.	182	70	38.4	57	2	10	1
*Erie, Pa.	195	58	29.7	20	12	20	6
*Evanston, Ill.	164	24	14.6	4	13	7	.
†East St. Louis, Ill.	295	219	74.2	162	33	15	9
†El Paso, Tex.	166	14	8.4	9	1	1	3
†Elkhart, Ind.	175	85	48.5	45	30	9	1
†Elmira, N. Y.	225	37	16.3	15	2	11	9
†Evansville, Ind.	255	70	27.4	51	16	3	.
*Fitchburg, Mass.	172	57	33.1	47	.	10	.
*Fond du lac, Wis.	73	19	26.0	13	2	4	.
†Fremont, Neb.	43	39	90.0	26	11	2	.
*Galveston, Tex.	313	159	50.8	119	40	.	.

||1906 \*1907. †1908. ¶Fire works. \*\*Sparks from all sources. <sup>o</sup>Municipal year not coextensive with calendar year; major portion of report covers 1906, 1907 or 1908, according to mark.

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
*Gd.Rapids, Mich.	388	32	8.2	1	19	12	.
†Gloucester, Mass.	154	24	15.5	16	5	2	1
†Gr't Falls, Mont.	53	16	30.0	10	1	5	.
†Green Bay, Wis.	95	9	9.4	4	1	.	4
*Haverhill, Mass.	309	31	10.0	23	6	1	1
*Hunt'gt'n, W.Va.	79	7	8.8	.	.	.	.
†Hagerstown, Md.	35	13	37.1	11	2	.	.
†Hannibal, Mo.	122	60	49.1	42	16	2	.
†Hamilton, O.	196	71	36.2	17	20	20	14
†Hyde Park, Mass.	130	87	66.9	55	5	25	2
Indian'polis, Ind.	1156	388	33.5	196	192	.	.
*Ithaca, N. Y.	43	6	13.9	6	.	.	.
Jacksonville, Fla.	283	126	44.5	24	95	7	.
*Jersey City, N. J.	900	191	21.2	142	3	19	27
†Jackson, Miss.	186	69	37.0	30	32	2	5
†Janesville, Wis.	94	18	19.1	12	3	1	2
†Joliet, Ill.	150	137	91.3	56	33	28	20
†Joplin, Mo.	223	28	12.5	20	.	8	.
*Knoxville, Tenn.	195	56	28.7	14	42	.	.
*Kingston, N. Y.	100	8	8.0	5	1	2	.
†Kansas City, Kan.	440	121	27.5	75	10	24	12
†Kansas City, Mo.	1972	267	13.5	100	48	62	57
†Kingston, Ont.	100	27	27.0	15	12	.	.
Lewiston, Me.	152	79	51.9	66	9	4	.
*La Crosse, Wis.	181	71	39.2	56	14	1	.
Lansing, Mich.	98	27	27.5	14	13	.	.
*Lexington, Ky.	121	43	35.5	3	36	4	.
*Lima, O.	119	37	31.0	35	.	2	.
*Lockport, N. Y.	70	7	10.0	1	3	3	.
0*Los Angeles, Cal.	988	80	8.1	72	8	.	.
*Louisville, Ky.	543	217	39.9	207	3	6	1
Lynn, Mass.	653	77	11.7	35	10	9	23
*Lowell, Mass.	833	118	14.1	93	20	.	5
*Logansport, Ind.	94	28	29.7	21	7	.	.
†Lancaster, Pa.	48	5	10.4	5	.	.	.
†Laredo, Tex.	24	9	37.5	4	1	2	2
†Leav'nw'th, Kan.	164	27	16.4	24	3	.	.
†Lebanon, Pa.	26	3	11.5	3	.	.	.

||1906. \*1907. †1908. <sup>0</sup>Municipal year not coextensive with calendar year; major portion of report covers 1906 1907, or 1908, according to mark.

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
†Lincoln, Neb.	230	29	12.6	2	13	13	I
†Lafayette, Ind.	161	67	41.6	23	18	26	.
*Memphis, Tenn.	654	180	27.5	67	98	15	.
Milwaukee, Wis.	1480	203	13.7	102	79	18	4
Minn'p'lis, Minn.	1259	231	18.3	128	56	41	6
*Muskegon, Mich.	81	45	55.5	22	15	5	3
*Malden, Mass.	193	27	13.9	27	.	.	.
*Montclair, N. J.	57	8	14.0	8	.	.	.
†Manch'ter, N.H.	307	130	42.3	119	7	3	I
†Macon, Ga.	167	72	43.1	24	43	5	.
†Madison, Wis.	143	49	34.2	43	5	I	.
†Meriden, Conn.	62	30	48.4	24	2	3	I
†MauchChunk, Pa.	7	1	14.2	1	.	.	.
†Medford, Mass.	113	15	13.2	5	7	2	I
†Montg'm'ry, Ala.	308	136	44.1	40	92	4	.
†Millville, N. J.	27	12	44.4	12	.	.	.
†Muncie, Ind.	157	117	74.5	109	2	5	I
†Moline, Ill.	89	51	57.3	22	18	3	8
*Newark, O.	84	12	14.2	6	5	I	.
*Newark, N. J.	746	220	29.4	184	26	6	4
*Newburg, N. Y.	49	8	16.3	8	.	.	.
Newton, Mass.	302	66	21.8	12	2	45	7
*Norwich, Conn.	122	55	45.0	44	I	9	I
0*New B'sw'k, N.J.	88	5	5.6	.	3	2	.
0*New Brit'n, C'nn.	123	19	15.4	8	6	4	I
0  New H'v'n, C'nn.	596	105	17.6	76	.	29	.
0*Norristown, Pa.	32	6	18.7	4	.	2	.
*New R'h'lle, N.Y.	90	20	22.0	16	3	I	.
New York:—							
Manhattan	7320	513	7.0	389	105	11	8
Brooklyn	3851	469	12.1	355	78	27	9
†Nanticoke, Pa.	25	15	60.0	12	.	I	2
†Nashua, N. H.	198	175	88.3	75	70	30	.
†Nashville, Tenn.	433	158	36.4	91	37	I	29
†Newport, R. I.	112	35	31.2	23	6	2	§4

||1906. \*1907. †1908.

||Sparks from burning chimney ignited shingles on roof. Sparks from fire ignited roofs of several other buildings.

§Sparks from 1 fire resulted in fire on 4 buildings.

0Municipal year not coextensive with calendar year; major portion of report covers 1906, 1907, or 1908, according to mark. Where marks indicate 2 years, report runs from July 1 to July 1.

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
†New Orleans, La.	693	67	9.6	30	29	8	.
†N'wp't News, Va.	110	48	44.0	38	5	4	1
†Norfolk, Va.	337	90	26.7	62	12	3	13
*Oshkosh, Wis.	104	31	29.8	24	7	.	.
*Oswego, N. Y.	109	30	27.5	6	11	3	10
†Omaha, Neb.	403	66	16.3	28	31	7	.
*Oakland, Cal.	318	128	40.0	55	53	5	15
†Oil City, Pa.	61	18	29.3	.	2	3	§13
†Orange, N. J.	83	31	37.3	20	3	5	3
*P'keepsie, N. Y.	100	43	43.0	37	6	.	.
Philadelphia, Pa.	3392	601	18.0	246	199	156	.
*Pittsfield, Mass.	88	26	29.5	25	.	1	.
Paterson, N. J.	182	115	63.2	91	7	12	5
*Petersburg, Va.	58	27	46.5	23	.	4	.
*Plainfield, N. J.	127	36	28.3	31	.	5	.
*Pottstown, Pa.	30	13	43.3	7	.	6	.
*Peoria, Ill.	351	94	26.7	37	27	1	29
*Portland, Ore.	689	103	14.9	38	56	9	.
*Pittsburg, Pa.	1390	251	18.0	133	72	46	.
†Passaic, N. J.	108	6	5.5	4	.	2	.
†P'r'rsb'g, W. Va.	71	14	19.7	5	.	9	.
†Perkasie, Pa.	2	2	100.0	1	.	.	1
†P'th Amboy, N. J.	48	8	16.6	7	.	.	1
†Portsmouth, Va.	59	21	36.0	16	5	.	.
†Pueblo, Colo.	247	81	32.7	32	.	27	22
†Paducah, Ky.	152	89	58.5	42	26	10	11
†P't Huron, Mich.	137	79	57.6	34	32	11	2
*Raleigh, N. C.	26	7	26.1	2	5	.	.
*Racine, Wis.	78	19	24.3	7	4	5	3
*Reading, Pa.	164	39	23.6	26	10	3	.
*Richmond, Va.	353	88	24.9	60	8	8	12
*Roanoke, Va.	148	8	5.4	.	7	1	.
*Richmond, Ind.	100	37	37.0	24	12	1	.
Rochester, N. Y.	638	78	12.2	47	14	13	4
†Rocky Mt., N. C.	4	4	100.0	1	3	.	.
†Rock Island, Ill.	102	89	87.2	24	29	10	26
*Salem, Mass.	169	28	16.5	15	6	3	4

||1906. \*1907. †1908. †1904 last report printed.

§13 fires resulting from bon fires. <sup>o</sup>Municipal year not coextensive with calendar year; major portion of report covers 1906, 1907, or 1908, according to mark. ||Six months only.

TOWN	Total Fires	Total Roof Fires	Percentage	Chimney Fires	Sparks from Chimneys	Sparks from Locomotives	Sparks from Other Fires
*Salt Lake City, U.	254	52	20.4	40	10	2	.
*San F'ncisco, Cal.	528	191	36.1	40	70	8	73
*Savannah, Ga.	240	78	32.5	41	18	.	19
Scranton, Pa.	313	50	15.9	43	1	6	.
*Shreveport, La.	199	81	40.7	20	43	17	1
*Sedalia, Mo.	118	41	34.7	38	.	.	3
Sioux City, Ia.	728	65	8.9	19	14	19	13
*South Bend, Ind.	72	54	76.0	40	7	7	.
*Staunton, Va.	39	8	20.5	5	3	.	.
"St. Louis, Mo.	2545	461	18.1	354	86	19	2
St. Paul, Minn.	880	235	26.7	158	24	35	18
*Stillwater, Minn.	41	25	60.9	19	5	1	.
*Sacramento, Cal.	238	75	31.5	67	8	.	.
*Springf'l'd, Mass.	435	67	15.4	57	5	5	.
*Spokane, Wash.	356	82	23.0	73	.	3	1
*Seattle, Wash.	563	56	9.9	17	38	.	1
*Superior, Wis.	218	86	39.4	50	36	.	.
*Sheboygan, Wis.	93	9	9.6	2	3	4	.
†Sch'n'ct'dy, N.Y.	257	45	17.5	32	5	5	3
†Springfield, Mo.	161	10	6.02	.	9	1	.
†St. Cloud, Minn.	36	19	52.7	12	2	2	3
†Syracuse, N. Y.	309	38	9.5	29	2	7	.
*Tacoma, Wash.	382	191	50.0	165	13	12	1
"Topeka, Kans.	181	68	37.5	10	10	12	36
Trenton, N. J.	187	33	17.6	13	13	4	3
Toledo, O.	676	99	14.6	55	41	3	.
*Taunton, Mass.	244	39	15.6	29	7	3	.
†Tampa, Fla.	149	37	24.8	18	12	.	7
†Terre Haute, Ind.	305	94	30.8	47	37	10	.
*Utica, N. Y.	233	31	13.3	16	5	6	4
*Waltham, Mass.	135	28	20.7	10	3	7	8
*Williamsp't, Pa.	106	32	30.2	22	7	3	.
*Wilmington, N.C.	151	84	55.6	38	43	3	.
Worcest'r, Mass.	953	166	17.4	123	17	18	8
Woonsocket, R.I.	153	35	22.8	24	2	9	.
*Wat'r'b'ry, Conn.	188	55	29.2	41	1	3	10
*Winona, Minn.	102	36	35.3	13	19	4	.
†Washington, D.C.	173	119	68.7	89	24	5	1
†Wilkesbarre, Pa.	122	25	20.5	17	5	3	.
†W'lla W'lla, Wsh.	85	30	35.3	23	1	6	.
†Watertown, Wis.	12	2	16.6	2	.	.	.
†Wheeling, W.Va.	206	68	33.3	.	.	.	.
*Yonkers, N. Y.	322	50	15.5	43	.	7	.
†York, Pa.	57	22	38.6	10	9	3	.

†1902 to 1905. §1904. "1905. ||1906. \*1907. †1908.

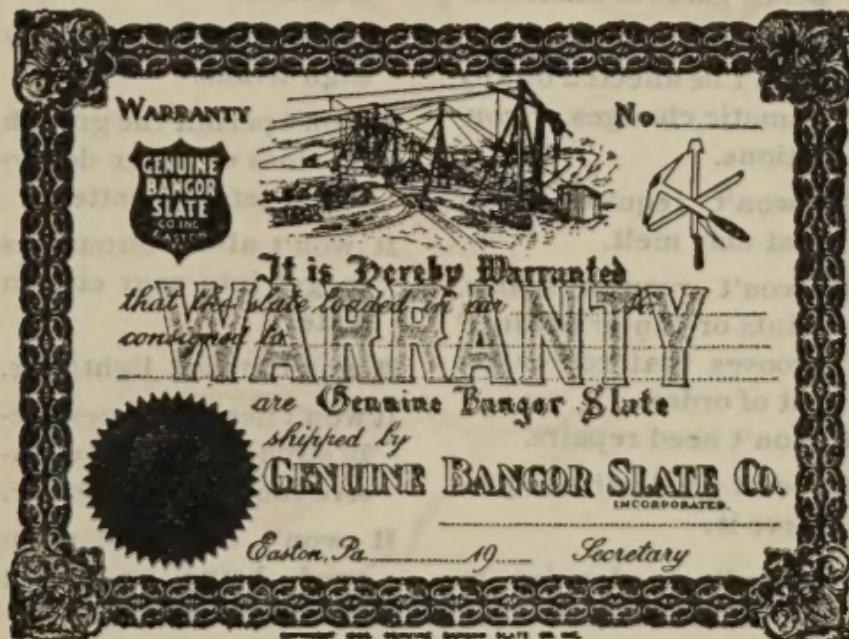
°Municipal year not coextensive with calendar year; major portion of report covers 1906, 1907, or 1908, according to mark.

"The economy of a Genuine Bangor Slate Roof is evidenced in the strongest light when a building is torn down. In such a case the slate on it can be used again, being just as good as new. But in buildings with any other roofing the latter is then either absolutely worthless or very much "second-hand."

## Caution

"Slate" is a general name like "lumber."

There is as much difference between slate and slate as between hemlock and oak. Genuine Bangor Slate Co.'s slate is the highest grade of slate sold at reasonable prices. Its superiority is attested by the numerous attempts of other slate producers to imitate our trade name and trade mark. We, therefore, found it necessary to protect our patrons by issuing a Warranty (see facsimile below) with each shipment. Your roofer will be glad to show you this document.



Genuine Bangor Slate put on 60 years ago (when first marketed) is today as good as new—the best reason for insisting on it. Ask for the Warranty. It is an "insurance policy" of durability and economy for your roof.

**A Roof of Genuine Bangor Slate Co's. Slate  
outlives the Building  
without Paint or Repairs.**

**Avoids all Roof Troubles:**

It won't wear away.	It won't absorb moisture or anything else.
It won't rust.	It won't rattle like a tin roof.
It won't decay.	It won't retain snow or similar loads.
It won't crack.	It won't contract or expand from heat or cold.
It won't tear.	It won't increase the load on your beams by being water-soaked.
It won't chip.	It won't shrink.
It won't warp.	It won't retain dampness.
It won't disintegrate.	It won't rot your roof timbers.
It won't crumble away.	It won't be blown off by high winds.
It won't burn.	It won't permit the growth of moss or other decaying vegetable matter.
It won't melt like a tar or asphalt roof.	It won't allow impurities to get into your cistern water.
It won't be affected by acids, gases or other substances.	It won't attract lightning.
It won't be affected by any climatic changes or conditions.	It won't need an excessively strong, hence expensive roof frame, like tile.
It won't require solder that may melt.	It won't easily be damaged, being so strong that it is the only roofing shipped without packing, boxing or wrapping of any kind.
It won't require seams, joints or "interlocking" grooves that rot or get out of order.	It won't cost you as much as any other roofing.
It won't need repairs.	
It won't need paint to preserve it.	
It won't need paint to make it look neat, clean and attractive.	
It won't lose its rich architectural appearance, no matter how long on the roof.	

and Oklahoma had been burned up? The actual fire damage in 1908 equals that amount,—\$237,000,000.



Wouldn't you be horrified if told that the entire Real Property in the States of Arkansas, Alabama, Nevada, New Mexico

**"What can I do to stem the fire danger?" you will ask; "I am only one."**

**It will pay everybody to help, both from a selfish and unselfish point of view.**

**And here's how you can help:**

**Talk about it to your friends, to house-owners, etc., particularly when about to build, to rent or when repairs are necessary.**

**Bear these facts in mind when you re-roof or build.**

**A Genuine Bangor Slate Roof will make even a frame building more fire-resisting,**

**and (being a non-porous, hence non-absorbent mineral) will outlive it without paint or repairs.**

**Can you ask more of a roof?**

**Further particulars free on request.**

**Genuine Bangor Slate Co.  
Easton, Pa.**